Further Tuning

When using a performance camshaft, it should be possible to increase the dynamic ignition timing by two to four degrees. Selecting a richer carburettor needle optimised for your particular configuration will further improve engine running (contact your specialist for advice). For optimum engine set-up we recommend the use of a rolling road. For performance tuning advice we recommend *How to Power Tune MGB 4-Cylinder Engines for Road & Track* by Peter Burgess 1996, Veloce Publishing. ISBN 978-1-84584615-2

Actual Camshaft Specification
(Duration & Timing values measured at 0.050" Cam Lift)

PROFILE	RPM RANGE	INLET DURATION	EXHAUST DURATION	INLET OPEN/ CLOSE TIMING	EXHAUST OPEN/CLOSE TIMING	PEAK CAMSHAFT LIFT
MILD	1250 - 5500	222	236	5 - 37	48 - 8	7.31 – 7.52mm
FAST	1500 - 6000	250	250	17 -52	52 - 17	7.52 – 7.52 mm

Sachet Lubricant (SILKGEAR 85W/140 GL5 Gear Oil)

This product is not classified as hazardous under current UK Health and Safety and Environmental Legislation when used in the application for which it is intended. However prolonged or extensive skin contact with the product may result in skin disorders.

FIRST AID MEASURES

Eyes:	Irrigate immediately with copious quantities of water. If irritation persists, seek medical attention.
Skin:	Wash thoroughly with soap and water.
Inhalation:	Remove to fresh air. If effects persist, seek medical advice.
Ingestion:	**DO NOT** induce vomiting. Wash mouth out with water. Obtain immediate medical attention showing this sheet.
Pressure injection:	Always obtain immediate medical attention even though the injury may appear minor.

Contact your supplier for information on other Q Parts ® *products engineered for your Classic!*

Performance Classic Camshafts

Congratulations on your purchase of a Q Parts Performance Classic Camshaft. Q Parts is committed to offering a range of quality, innovative automotive products with value and reliability foremost.

Kit Contents

- Steel billet CNC Camshaft (Fast or Mild Profile) x 1
- Performance Camshaft Followers x 8
- Double Valve Springs & Alloy Valve Spring Caps x 8
- Stainless Steel Inlet Valves x 4 (Optional)
- Stainless Steel Exhaust Valves x 4 (Optional)
- Cam Lube Sachet x 1

Application

The supplied camshaft is suitable for **18V type B series 5 Main Bearing Engines**.

General Instructions

The instructions below are intended to provide outline installation guidance only. For specific details on how to remove and install the camshaft please refer to the factory MGB & MGBGT Workshop Manual. Torque settings can be found in the MGB & MGBGT Workshop Manual.

If you are intending to change other fuel or ignition components it is advisable to install and test these first prior to replacing the camshaft. **Be sure that the engine starts and runs well before attempting to install the camshaft and related components.** If this advice is not followed you risk increased initial wear of the camshaft and followers from poorer lubrication and less ideal initial conditions whilst fault finding in an attempt to get the engine to run.

Please Note - Top and bottom gasket sets are required to complete installation.

Distributor Removal & Replacement

Please refer to the workshop manual for guidance prior to distributor removal noting that in order to retain the engine's static ignition timing you should not disturb the distributor clamping bolt. It is advisable to make a note of the rotor arm position relative to number one cylinder whilst at Top Dead Centre (TDC) of cylinder one's compression stroke in order to ensure that the ignition timing is retained on re-installation. Note specifically the method of reinstalling the distributor drive shaft in the Workshop Manual.

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Changing the Inlet & Exhaust Valves (Optional)

If you have purchased a Q Parts Performance Classic Camshaft kit complete with 214N stainless steel austenitic wasted stem Inlet & Exhaust Valves please refer to the MGB & MGBGT Workshop Manual for removal and replacement advice, noting that a spring compressor, lapping tools and grinding paste are required to carry out installation. Q Parts Performance Inlet & Exhaust Valves benefit from chrome plating of the valve stem for added durability and compatibility with cast iron guides and a wasted stem design for improved gas flow and lightness.

Inlet Valves- Big or Small?

B Series 5 Main Bearing Engines 18V581/18V582/ 18V583 were fitted with the 'big valve' cylinder head with the casting number 12H2709 (part number 12H2708) and made use of the larger 1.625" Inlet Valves. These cylinder heads were factory fitment on Chrome Bumper MGBs manufactured from 1971 to 1973. Early MGB Chrome Bumper models, very late Chrome Bumper models (1974) and all Rubber Bumper MGBs (1975 onwards) were fitted with Inlet Valves with a head diameter of 1.562". In the event the supplied inlet valves are not correct for your vehicle, please contact your supplier for assistance.

Double Valve Springs

The double valve springs provided are designed to close the valve and maintain contact of the cam follower with the cam lobe. They have been selected to prevent valve float (bounce) and are matched to the camshaft to minimise wear and optimise valve performance at higher RPM. The double spring design allows increased valve lift over conventional single springs by minimising the potential for coil binding. Optimum performance of the valve-train can only be achieved by using the supplied valve springs. The supplied alloy valve caps are designed for use with double valve springs. Refer to the MGB & MGBGT Workshop Manual for removal and replacement advice noting that a valve spring compressor will be required to carry out installation.

Replacing the Camshaft

Replacing a camshaft on a B-Series engine requires removal of the inlet & exhaust manifold, pushrods, cam followers, timing cover, timing chain & gears, distributor, oil pump & drive and sump. For detailed camshaft removal instructions refer to the MGB & MGBGT Workshop Manual. If the engine is to remain in situ the radiator, grill, rubber bumper (if applicable) and oil cooler should be removed, noting an engine hoist may be useful to facilitate removal of the sump when raising the engine slightly off its mountings.

Please Note - The Oil Pump Drive Must Be Re-Installed To Prevent Engine Failure.

Camshaft Followers

The supplied camshaft followers are designed for use within 18V B series MGB engines. These followers have been specifically designed for use with the supplied performance camshaft. The camshaft followers incorporate a lightened, drilled design for greater responsiveness and improved lubrication to reduce wear of the cam lobe. Failure to use the supplied followers may result in premature wear of the camshaft and or followers leading to engine failure. Be sure to follow the instructions below relating to lubrication of the camshaft and followers during installation. Only use the supplied lubrication or a quality engine assembly product.

Camshaft Timing

Your Q Parts Performance Classic Camshaft has been machined from steel billet making use of the latest CNC machining technology to achieve consistent profiles. Unlike re-profiled camshafts which can suffer from inconsistencies across the cam lobes and typically do not retain their original timing specification, reducing the effectiveness of the factory pulley timing marks, a Q Parts Performance Classic Camshaft can be simply timed-in using the camshaft timing guidelines within the MGB & MGBGT Workshop Manual. However for optimum performance we recommend the use of a Duplex Vernier Pulley system to provide greater accuracy when setting the inlet full lift position (we refer you to the values given below). Alternatively offset woodruff keys may be used. (In both cases the use of a timing disc and dial test indicator (DTI) is required).

Camshaft Timing Data

MILD CAM	107^0	(Inlet Full Lift After Top Dead Centre)
FAST CAM	108^0	(Inlet Full Lift After Top Dead Centre)

Please Note- Variances in engine dynamics may require advance or retard around these given values.

Valve Clearances

Inlet and Exhaust valve clearances should be set to 0.015" cold.

Bedding-in the Camshaft

Bedding-in the camshaft properly is essential to ensure a long service life. On installation coat the top and sides of the camshaft followers with engine oil. Coat the camshaft lobes and bottom of the camshaft followers using the contents of the lubricant sachet. The enclosed lubricant is optimised for high stress areas and must be used on fit up. Before bedding-in can commence ensure you have refilled the engine with the recommended oil.

If the performance camshaft installation has been part of a wider engine rebuild, or there has been an extended period of time between installation of the valve-train and bedding-in; it is an advantage to prime the oil system. First remove the spark plugs, turn the engine over for no more than ten seconds on the starter motor and leave a further ten second interval between cranking. This should be repeated until the oil pressure gauge registers a reading.

Ready your engine to ensure a quick start to reduce load on the camshaft and followers by setting the ignition timing, check the batteries are fully charged and switch on the ignition in order for the fuel pump to prime the carburettors. Once the engine is ready to start it is important not to crank the engine too much to get it started. On engine start up increase rpm immediately to 2500rpm and hold it there for 15 to 20 minutes by adjusting the throttle stops (idle screws). Use the accelerator pedal to increase the rpm incrementally up to 2700rpm, this will aid oil splash within the cylinder block and actually reduces the loads between cam lobes and follower. **Do not allow the engine to idle at any time during this period.** If you need to adjust something on the car during this time, return the engine to idle using the throttle stop adjuster (idle screws) before switching off the ignition. Carry out the required adjustments and then restart, returning to 2500rpm for the remainder of the bedding in process

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